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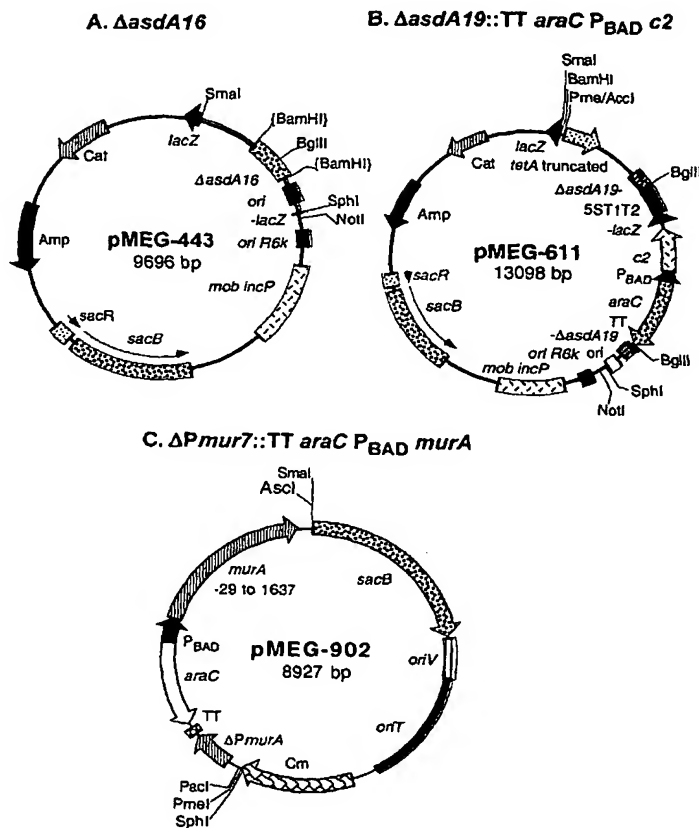
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US 60/407,522 (CIP)
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- (71) Applicant (for all designated States except US): WASHINGTON UNIVERSITY [US/US]; One Brookings Drive, St. Louis, MO 63130 (US).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): CURTISS, Roy, III [US/US]; 6065 Lindell Boulevard, St. Louis, MO 63112-1009 (US). KONG, Wei [US/US]; 765 Westwood, 6B, St. Louis, MO 63105 (US).
- (74) Agents: LU, Kimberly, H et al.; Thompson Coburn LLP, One US Bank Plaza, St. Louis, MO 63101 (US).
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[Continued on next page]

(54) Title: REGULATED BACTERIAL LYSIS FOR GENE VACCINE VECTOR DELIVERY AND ANTIGEN RELEASE



(57) Abstract: The present invention generally relates to regulated host-vector systems for delivery of genetic vaccine vector or desired gene products to a eukaryotic host, preparations of bacterial genetic vaccines, genetically engineered microorganisms that are useful for delivery of genetic vaccine vectors or desired gene products, and methods of use for the host-vector system.



European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/26883

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/64 C12N15/65 C12N15/70 C12N15/74 A61K39/00
C12N1/21 A61K35/74

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

BIOSIS, EPO-Internal, MEDLINE, EMBASE, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	KONG W ET AL: "Construction and application of host-vector systems for DNA vaccine vector delivery." ABSTRACTS OF THE GENERAL MEETING OF THE AMERICAN SOCIETY FOR, vol. 103, 2003, pages Z-016, XP009026097 103rd American Society for Microbiology General Meeting; Washington, DC, USA; May 18-22, 2003, 2003 ISSN: 1060-2011 (ISSN print) the whole document --- -/--	1-46

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

20 February 2004

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27/02/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Friedrich, C

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/26883

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	KONG W ET AL: "Regulated bacterial lysis for antigen release." ABSTRACTS OF THE GENERAL MEETING OF THE AMERICAN SOCIETY FOR, vol. 103, 2003, pages E-031, XP001179186 103rd American Society for Microbiology General Meeting; Washington, DC, USA; May 18-22, 2003, 2003 ISSN: 1060-2011 (ISSN print) the whole document ----	1-46
A	TACKET C O ET AL: "Safety and immunogenicity in humans of an attenuated Salmonella typhi vaccine vector strain expressing plasmid-encoded hepatitis B antigens stabilized by the asd-balanced lethal vector system" INFECTION AND IMMUNITY, AMERICAN SOCIETY FOR MICROBIOLOGY. WASHINGTON, US, vol. 65, no. 8, August 1997 (1997-08), pages 3381-3385, XP002239901 ISSN: 0019-9567 page 3382, column 1, paragraph 2 ----	1-46
A	NAKAYAMA K ET AL: "CONSTRUCTION OF AN ASD+ EXPRESSION-CLONING VECTOR: STABLE MAINTAINANCE AND HIGH LEVEL EXPRESSION OF CLONED GENES IN A SALMONELLA VACCINE STRAIN" BIO/TECHNOLOGY, NATURE PUBLISHING CO. NEW YORK, US, vol. 6, no. 6, 1 June 1988 (1988-06-01), pages 693-697, XP000578379 ISSN: 0733-222X page 693, column 2, paragraph 2 ----	1-46
A	WO 02 059292 A (UNIV WASHINGTON) 1 August 2002 (2002-08-01) page 8, line 10 - line 22 -----	1-46

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 03/26883

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: —
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.1

Although claims 20-22, 39-42, and 44-45 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box I.1

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 03/26883

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 02059292	A	01-08-2002	EP 1349925 A2 WO 02059292 A2	08-10-2003 01-08-2002